

CMOS ON HYBRID SUBSTRATE WITH DIFFERENT CRYSTAL ORIENTATIONS
USING SILICON-TO-SILICON DIRECT WAFER BONDING

ABSTRACT OF DISCLOSURE

A method in which semiconductor-to-semiconductor direct wafer bonding is employed to provide a hybrid substrate having semiconductor layers of different crystallographic orientations that are separated by a conductive interface is provided. Also provided are the hybrid substrate produced by the method as well as using the direct bonding method to provide an integrated semiconductor structure in which various CMOS devices are built upon a surface orientation that enhances device performance.